

WHAT IS CLAIMED IS:

1. A semiconductor integrated circuit device comprising an amplifying circuit for amplifying an analog color video signal outputted from an imaging element, an AD conversion circuit for converting the amplified signal to a digital signal, a differential means for obtaining a difference between the codes of the adjacent pixels in regard to the same color after the AD conversion and a code conversion means for code conversion of an output of said differential means.
2. A semiconductor integrated circuit device according to claim 1, wherein said code conversion means is a binary gray code conversion circuit for converting the input binary code to the gray code.
3. A semiconductor integrated circuit device according to claim 1, wherein said code conversion means is composed of a circuit for adding or subtracting a fixed value to or from the input code.
4. A semiconductor integrated circuit device according to any one of claims 1 to 3, wherein said differential means is composed of a delay circuit for delaying an output code of said AD conversion circuit and a subtraction means for obtaining a difference between the code delayed by said delay circuit and the input code, while said delay circuit is constructed to vary a delay time depending on the color arrangement of the input video signal.

5. An imaging system comprising:

an imaging element provided with a color filter;  
a semiconductor integrated circuit device  
including an amplifying circuit for amplifying an  
analog color video signal outputted from said imaging  
element, an AD conversion circuit for converting the  
amplified signal to a digital signal, a differential  
means for obtaining a difference between the codes of  
the adjacent pixels in regard to the same color after  
the AD conversion and a first code conversion means for  
converting an output of said differential means; and

a semiconductor integrated circuit device for  
image process including a second code conversion means  
for converting the codes outputted from said  
semiconductor integrated circuit device and an image  
processing circuit.

6. An imaging system according to claim 5, wherein  
said first code conversion means is a binary gray code  
conversion circuit for converting the binary code to  
the gray code and said second code conversion means is  
a gray binary code conversion circuit for converting  
the gray code into the binary code.

7. An imaging system according to claim 5, wherein  
said first code conversion means is composed of a circuit  
for adding or subtracting a fixed value to or from an  
input code and said second code conversion means is  
composed of a circuit for subtracting or adding a fixed

value from or to an input code.

8. An imaging system according to any one of claims 5 to 7, wherein said differential means is composed of a delay circuit for delaying an output code of said AD conversion circuit and a subtraction means for obtaining a difference between the code delayed by said delay circuit and the input code, and said delay circuit is constructed to vary a delay time depending on color arrangement of an input video signal.

9. An imaging system according to any one of claims 5 to 8, wherein a storage means is provided to store a digital video data, said semiconductor integrated circuit device for image process is provided with a data compression circuit for compressing the code converted by said second code conversion means and a data expanding circuit for expanding the compressed data, and the data compressed by said data compression circuit is stored in said storage means.

10. A signal conversion method for converting an analog color video signal outputted from an imaging element to a digital signal, wherein a difference between the codes of the adjacent pixels in regard to the same color after the AD conversion of the video signal by the AD conversion circuit and an output code of said differential means is converted to the code of less number of bits to be changed over among the preceding and succeeding codes.